SEQUENCE LISTING

<110>	David, Weinstein							
<120>	NOVEL GROWTH FACTOR OPA1 AND USES THEREOF							
<130>	96700/595							
<140>	US 09/479,145							
<141>	2000-01-07							
<150>	09/294,764							
<151>	1999-04-19							
<160>	4							
<170>	PatentIn version 3.0							
<210>	1							
<211>	1680							
<212>	DNA							
<213>								
<220>								
<221> Unsure								
<222>	(1098)(1104)							
<223>	n at positions 1098-1104 may be t, a, c, or g							
<400>	1							
ttgaga	ctgg ttgcataaca gcagggtacc tgaaagagcc ttctgggagt tagtgaacta	60						
ggtaga	ttgt tttgttcaca taacgccacc atcaacttaa agtgaattgt ctttgttata	120						
aatgag	gtca ctatggactt accctaaaga tcttctgtac ttctgtcttc cataggacaa	180						
atgata	agta ctacatacct catctcttgg gttattattg tagtcttgca ttcatggtta	240						
tgaatt	taaa aataaatacc aattatggaa atagtactaa aggcttgccg cacatgaaac	300						
attatt [.]	ttaa ttggtttaaa gtccctttat aaagagtgct acatggttta gataaaggaa	360						
acatata	aact attgagttac aggggatttt attaattata aaatgcaatc aatttaaatt	420						
acgtag	gttt aagactagtc cettggataa geeccaageg aatttgtett eagattatta	480						
aaatta	gtgc tgtaaatcag ggtgggcaat tcacagcctt tctgaactga ctgaactaga	540						
act+ac	adha laadhdhhohd of dadachos dusunttisis ishiittiti isii isii isti							

ttctttcaac	tgggttttca	gcataaatgg	gaactgatgt	agaaggcagg	atttagccct	840
tctaggcaaa	agaaaagctc	agttgggttt	cacgagtgtt	cctgtgctta	tattcagtct	900
gtgcctacat	gttctcatgc	atgtctaacc	tgatttacct	cttacctgta	acctacctta	960
tcatgtggct	tttaattgac	agtcactcag	ccatttctaa	gcagatatag	tagtaccttt	1020
cagaactcac	attggcaagt	gtaaaaagat	gacttaaggt	gaagtgagga	caaaatcaca	1080
ttctgcatac	taacctannn	nnnnctccct	ttaaggtgct	aaacttgcac	ctcatgtcca	1140
ctcagtaaca	agtattggga	cgtagagcac	agcctcactc	agctctgaaa	ggtaatacag	1200
cttgtgagga	agtgagccag	cagtggcctt	tgcaattgtg	gatcttgagc	tctgctctca	1260
gcagatttca	ggtgtaacca	tttgttaact	gtactgaagg	tgtgtcctca	agaagaaagt	1320
gttcaaatta	aaaaagctgc	tgccaagtac	actgtgtggt	cttctccttt	gaatcctagg	1380
gttctatccc	tcttcagagt	catgtttctg	gtgctgctac	tttaaaacac	agctcacaag	1440
aataactaac	ttgctcaaat	atggagaaaa	ctcaataggg	ttcagggagg	ttctggcagt	1500
gtgcagtgtg	aaataatcct	gagtccttgc	tgaacacaac	tgtaggcttg	agttataaag	1560
cacattccaa	attttaaata	aaagcattta	ctcaattatt	ataaaacaac	atatttaaaa	1620
agatgaacca	caccaaaggt	catcaaaaca	cctttttata	aattagataa	ttctacctgt	1680
<210> 2						
<211> 2	1					
<211> DNA	,					
	o sapiens					
<400> 2	Japiens					
	ttgcataaca	acadatacc	tgaaagagcc	ttctqqqaqt	tagtgaacta	60
	tttgttcaca					120
	ctatggactt	_				180
	ctacatacct					240
	aataaatacc		_	-		300
	ttggtttaaa					360
	attgagttac					420
acacacaact	actgagttat	aggggaccc	accaaccaca	addegeddee	aaccaaacc	120

tgccaactgt tggaattcac tttattgtag aaaaacccaa actgagactc ttaagttitg - "20

acgtaggttt aagactagte eettggataa geeccaageg aatttgtett eagattatta 480

,	tttagc	aatg	tgtttctggt	atgaaacaaa	ctactgtgtc	actgtccagg	taggaaacaa	780
	ttcttt	caac	tgggttttca	gcataaatgg	gaactgatgt	agaaggcagg	atttagccct	840
	tctagg	caaa	agaaaagctc	agttgggttt	cacgagtgtt	cctgtgctta	tattcagtct	900
	gtgcct	acat	gttctcatgc	atgtctaacc	tgatttacct	cttacctgta	acctacctta	960
	tcatgt	ggct	tttaattgac	agtcactcag	ccatttctaa	gcagatatag	tagtaccttt	1020
	cagaac	tcac	attggcaagt	gtaaaaagat	gacttaaggt	gaagtgagga	caaaatcaca	1080
	ttctgc	atac	taacctattt	ttttctccct	ttaaggtgct	aaacttgcac	ctcatgtcca	1140
	ctcagta	aaca	agtattggga	cgtagagcac	agcctcactc	agctctgaaa	ggtaatacag	1200
	cttgtg	agga	agtgagccag	cagtggcctt	tgcaattgtg	gatcttgagc	tctgctctca	1260
	gcagati	ttca	ggtgtaacca	tttgttaact	gtactgaagg	tgtgtcctca	agaagaaagt	1320
	gttcaaa	atta	aaaaagctgc	tgccaagtac	actgtgtggt	cttctccttt	gaatcctagg	1380
	gttctat	tccc	tcttcagagt	catgtttctg	gtgctgctac	tttaaaacac	agctcacaag	1440
	aataact	taac	ttgctcaaat	atggagaaaa	ctcaataggg	ttcagggagg	ttctggcagt	1500
	gtgcagt	tgtg	aaataatcct	gagtccttgc	tgaacacaac	tgtaggcttg	agttataaag	1560
	cacatto	ccaa	attttaaata	aaagcattta	ctcaattatt	ataaaacaac	atatttaaaa	1620
	agatgaa	acca	caccaaaggt	catcaaaaca	cctttttata	aattagataa	ttctacctgt	1680
	<210>	3						
	<211>	20						
	<212>	DNA						
			Einin n					
	<213> artificial sequence							

<220>

<221> primer_bind

<222> (1)..(20)

 $<\!223\!>$ degenerate primer corresponding to deduced opal protein sequence; n at positions 3, 6, 13, and 16 may be t, a, c, or g

<400> 3

gcntcngaag ctnctngaag

20

<210> 4

011 00

. 2200

<221> primer_bind

<222> (1)..(22)

<223> degenerate primer corresponding to deduced opal protein sequence;
n at positions 7, 10, 13, 16, 19, and 22 may be t, a, c, or g

<400> 4

tttcatntcn tcntcngtng gn

22